

## REMARKS

Applicant respectfully requests reconsideration of this application as amended.

### Office Action Rejections Summary

Claims 19-21, 23-29, 32-35 and 39-41 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,815,427 of Cloud et al. ("Cloud") in view of U.S. Patent No. 6,021,469 of Tremblay ("Tremblay").

Claims 22, 30-31, and 36-38 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Cloud.

Claim 25 has been objected to under 37 C.F.R. §1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

### Status of Claims

Claims 19-41 remain pending in the application. Claims 19, 26, 32 and 39 have been amended to define a preexisting claim limitation more properly. Claim 25 has been amended to correct for a typographical error. No claims have been added. No new matter has been added. No claims have been canceled.

### Claim Objections

Claim 25 has been objected to under 37 C.F.R. §1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. In particular, the Office Action states:

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 24 and 25 have the same scope because claims 21 and claim 25 are identical.

(Office Action, June 4, 2003, page 2).

Applicant respectfully disagrees with the Office Action's assertion and submits that claim 24 and 25 do not have the same scope and that claims 21 and 25 are not identical.

Claim 24 does not depend from, and does not include the same limitations as, claim 21. Rather, claim 24 depends from claim 20. Claim 25 depends from claim 24. Claim 24, and thereby claim 25, includes limitations not found in claim 21. In particular, claim 24, and thereby, claim 25 includes the limitations of:

a plurality of drivers, each of the plurality of drivers coupled between a device pad and a device circuit, each of the plurality of drivers having a control input; and

a multiplexer coupled to the control input of each of the plurality of drivers to select one of the plurality of drivers

Applicant submits that claim 21 does not include such limitations and, therefore, claims 21 and 25 are not identical. As such, applicant submits that claim 25 is proper and requests that the objection with respect to claim 25 be withdrawn.

#### Claim Rejections

Claims 19-21, 23-29 and 32-35 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Cloud in view of Tremblay. In particular, the Office Action states:

Regarding claims 19, 26, 32, and 39, Cloud et al. teach a memory device (Fig. 1 and 7, element 10) coupled with the processor (Fig. 7, element 84), the memory device (Fig. 1, element 10) comprising memory storage (Fig. 1, element 12) and three different interfaces (Fig. 1, element 14 includes three different interfaces which are shown in the Fig. 5 and 6) such as the programming interface (Fig. 5, col. 5, lines 45-58), the test interface (Fig. 6, element 77, col. 6, lines 44-47) and operation interface (Fig. 6, element 74 and 76, col. 6, lines 36-44) to operate the memory device (Fig. 1, element 10) in one of three different modes (Fig. 5 and 6, col. 5, lines 45-58 and col. 6, lines 36-37).

Cloud does not teach that the memory storage and the three different interfaces reside in a common die.

However, Tremblay teaches that the memory storage and the three different interfaces (I/O controller interfaces, memory controller interfaces and instruction cache unit interface as taught as in col. 11, lines 23-35 and

col. 17, lines 44-45) reside in a common die (Fig. 1, element 100, hardware processor) (col. 11, lines 27-28).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teachings of Tremblay in the memory system of Cloud and have the memory storage and the three different interfaces reside in a common die for the advantage of much better performance characteristics (col. 5, lines 40-42 and col. 6, lines 3-5) and not necessarily to arbitrate to use the memory bus since the memory storage and the three different interfaces as hardware processor is the only master (col. 11, lines 27-28 and 39-41).

(Office Action, June 4, 2003, pages 3-4).

Applicant respectfully disagrees with the Office Action's assertions. Applicant respectfully submits that the rote invocation the skill of one in the art is not a sufficient basis for providing such a modification of Cloud and that it would be impermissible hindsight, based on applicant's own disclosure, to make such a modification. Applicant respectfully submits that the Office Action has failed to point out any motivation for the asserted modification of Cloud other than the advantage provided by the applicant's own disclosure. Indeed, it appears that the teachings of the present application have been used as a blueprint in arriving at the rejection. Such is a clear example of hindsight reconstruction and cannot properly be used as grounds for rejecting the present claims. The Office Action must show a motivation within the cited references as to why one of skill in the art, facing the problem confronting the inventor of Cloud, would be motivated to make such a purported combination that creates the case of obviousness.

The Office Action states that it would have been obvious to one of skill in the art to utilize the teachings of Tremblay in the memory system of Cloud "for the advantage of much better performance characteristics." Applicant submits that few patents would be allowable if broad generalizations such as "much better performance characteristics" could be used in rejections of applications to provide a motivation to modify references by one of skill in the art under 35 U.S.C. §103(a).

Moreover, applicants submit that one of skill in the art would not be motivated to combine the teachings of Cloud and Tremblay. One of the objects of the teachings in

Tremblay is to reduce the expense associated with memory storage on a hardware processor. (Tremblay, col. 6, lines 3-4 and lines 20-27). In particular, Tremblay advocates the advantage that additional memory storage typically required by a software interpreter is eliminated from the hardware processor 100 described therein. Therefore, one of skill in the art, facing the problems confronting the inventor of Cloud, would not be motivated to look to the teachings of Tremblay because **Tremblay teaches away from the use of additional on die memory storage.**

Moreover, even if the Tremblay were somehow combined with Cloud, **the combination of Cloud and Tremblay still lacks a limitation in each of independent claims 19, 26 and 32.** Each of independent claims 19, 26 and 32 includes the limitation of:

memory storage and **three different interfaces to operate the memory storage in at least one of three different modes**, wherein the memory storage and the three different interfaces reside in a common die.

Tremblay discloses the use of different memory storage units. First, the I/O controller 11 of Tremblay does not interface with a memory. Rather, I/O controller 111 interfaces with external I/O devices and instruction cache controller 121. Instruction cache controller 121 interfaces with instruction cache 125. Data cache controller 161 interfaces with data cache 165. (Tremblay, figure 1, col. 11, lines 23-35 and col. 17, lines 44-45). Data cache 165 and instruction cache 125 are **not** the same memory storage. As such, the interfaces of Tremblay are used to interface with **different** memory storage units.

In contrast, in each of claims 19, 26 and 32, the three different interfaces **operate the same memory storage** in at least one of three different modes. Therefore, applicant submits that each of claims 19, 26, and 32 (and their dependent claims) are patentable over the cited references.

Claim 38 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Cloud. In particular, the Office Action states:

Regarding claims 22, 30-31 and 36-38, Cloud et al. teach the limitations in the claims above. Cloud does not teach the memory device is a flash memory and BIOS memory. However, Cloud indicates that the memory device is SDRAM, but it may be another type of memory device (col. 6, lines 3-7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the memory device as the BIOSs which store on a flash memory chip that can be upgraded via software. This would have motivated one of ordinary skill in the art to use flash memory chip in a PC so that the BIOS could be updated in place instead of being replaced . . .

In response to applicant's argument that Cloud teaches away from the use of a memory device such as a flash memory, it is noted that Cloud did indicate that another type of memory device can be used (col. 6, lines 3-7). Other type of memory device include the flash memory since the flash memory have the advantage of keeping the content of data stored even the power to the memory is off, this advantage is taught in the Yamada's reference, U.S. Patent 6125423 (col. 1, lines 19-23

(Office Action, June 4, 2003, page 6).

Applicant respectfully disagrees with the Office Action's assertions. Although, Cloud discloses that memory device 10 may be "another type of memory device" (col. 6, lines 3-7) other than a SDRAM, a flash memory is not the "another type of memory device" contemplated or suggested by Cloud. Rather, the "another type of memory device" contemplated by Cloud is another type of **volatile** memory device.

Applicant respectfully submits that it would be impermissible hindsight, based on applicants' own disclosure, to combine Cloud with purported skill in the art to arrive at applicants' claimed invention. Moreover, a rote invocation of the high level of skill in the art is not sufficient to supply a motivation to combine references. The burden is on the Examiner to show why one would be so motivated as to come up with a combination. Here, the burden, respectfully, has not been met because no reason why one would be motivated to combine the cited references has been provided by the *Examiner other than the advantage provided by the applicant's own disclosure.*

Moreover, there is no motivation to combine the cited references based on the teachings of Cloud. In particular, Cloud **teaches away** from the use of a memory device such as a flash memory. One of the problems confronting the inventors of Cloud, and

advantages of the teachings of Cloud, is cost effectiveness. (Cloud, col. 2, lines 1-16). The types of memory devices that Cloud discloses are inexpensive volatile memory devices that lose their stored data when power to the memory is removed.

In contrast, a flash memory device is a non-volatile memory device that retains the contents of data stored within it even after power to the memory is removed. Such a technological feature tends to make flash memory more expensive than volatile memory devices such as the SDRAM and DRAM devices taught by Cloud. As such, one of skill in the art would not be motivated to look to flash memory devices for solutions to the problems facing the inventors of Cloud due the cost prohibition of flash memory devices in achieving a cost effective solution as required by Cloud. As such, it would not be obvious to combine a flash memory with the teachings of Cloud. Therefore, applicant respectfully submits that claim 38 is patentable over Cloud.

Claims 39-41 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Cloud in view of Tremblay. Applicant submits that claim 39 is patentable over the cited references.

Claim 39 recites:

A method, comprising:

selecting an interface from among at least a programming interface and a test interface in a memory device having memory storage, wherein the programming interface, the test interface and the memory storage reside in a common die, **the programming interface to program the memory storage and the test interface to test the memory storage;** and

operating the memory device with the selected interface

(emphasis added)

Applicants submit that the purported programming interface of Cloud operates to program I/O select circuit 55 to couple an I/O circuit to output bus 56 and does not program memory module 12. (Cloud, col. 5, lines 41-45). Tremblay fails to cure this deficiency. In contrast, claim 39 recites “the programming interface to program the

memory storage.” Therefore, applicant submits that claim 38 is patentable over the cited references.

Given that claims 40-41 depend from claim 39, applicant submits that claims 40-41 are also patentable over the cited references.

In conclusion, applicant respectfully submits that in view of the arguments and amendments set forth herein, the applicable objections and rejections have been overcome.

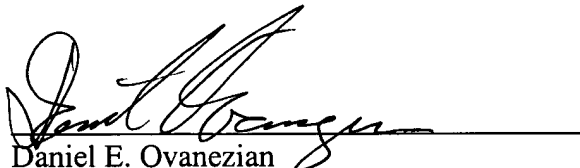
If the Examiner believes a telephone interview would expedite the prosecution of this application, the Examiner is invited to contact Daniel Ovanezian at (408) 720-8300.

If there are any additional charges, please charge our Deposit Account No. 02-2666.

Respectfully submitted,

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